Report on March 2003 collection of *Lampsilis higginsii* from the Mississippi River, near Cassville, Wisconsin for use as brood stock for mussel propagation at the Genoa National Fish Hatchery.

Wisconsin Department of Natural Resources.

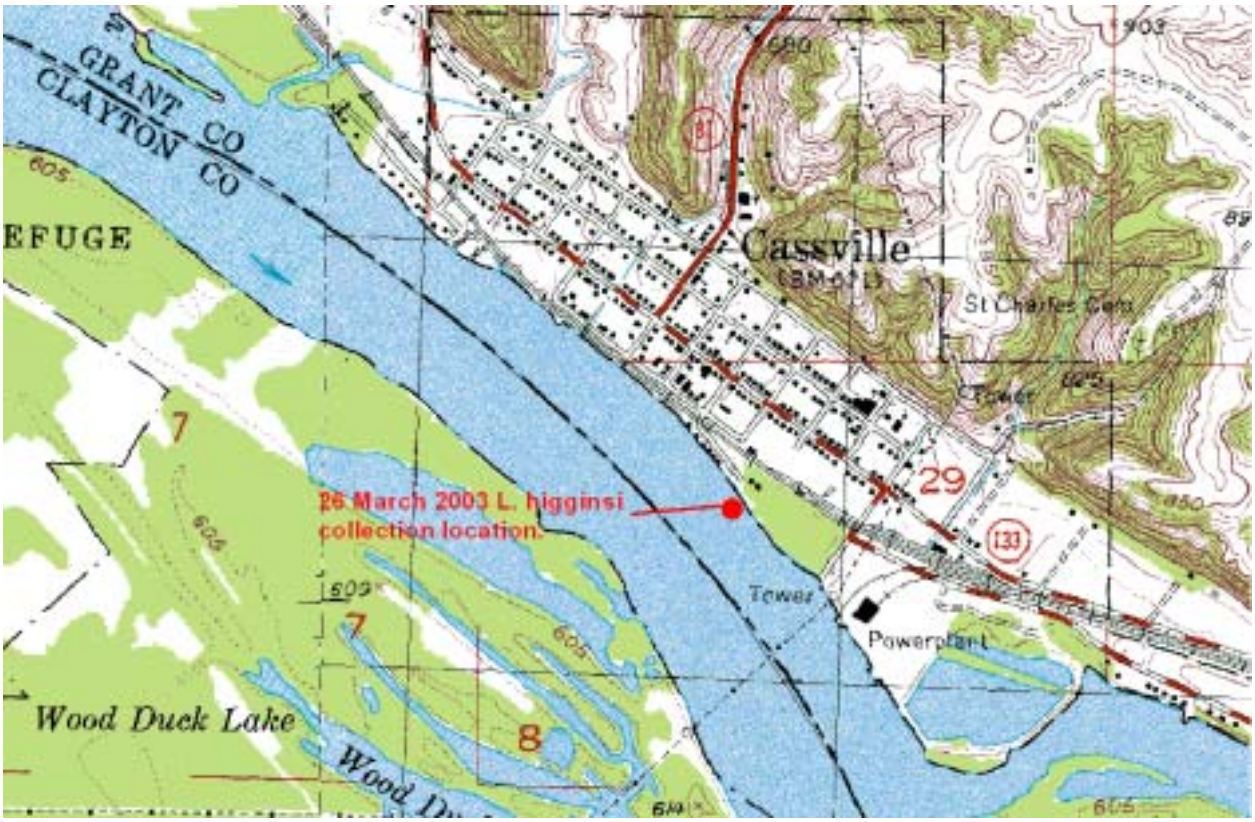
15 January 2004.

This is a report on the 2003 collection of *Lampsilis higginsii* from the Mississippi River, adjacent to Cassville, Wisconsin for use as brood stock for mussel propagation at the Genoa National Fish Hatchery. This effort was part of mussel propagation related to the continued operation and maintenance of the Mississippi River System Navigation project by the U. S. Army Corps of Engineers in cooperation with the associated, multi-agency Mussel Coordination Team.

Persons involved in the 26 March 2003 collection were staff from the Wisconsin Department of Natural Resources including David Heath and Patrick Short.

The collection location was a previously established 20-ft square "stockpile" delineated underwater with ropes. A description of this location is: 42° 42' 37.2"N, 90° 59' 18.0"W, Twp. 3N, Rng 5W, Sec 29, SE of NE of NW, Grant County, Wisconsin, Mississippi rivermile 606.47 (see Figure 1). Water temperature was 8.8°C (47.9°F) and air temperature was 10.0°C at noon (50°F). The flow at the Guttenburg Lock and Dam (Lock and Dam # 11) was 56,900 cubic feet per second.

Figure 1. Location where *L. higginsii* were collected near Cassville, Wisconsin on 26 March 2003.



A total of 21 living and two dead *L. higginsii* were collected. Of the living, there were 21 females and zero males. Of the living mussels collected all were females because we were able to easily distinguish them from other species and males. At the time of collection, females were displaying and protruding more than normal from the substrate making it easy to visually sort for the target species and gender. Data for all specimens collected is given in Table 1.

On the day of collection, all 21 *L. higginsii* were transported in Mississippi River water to the Genoa National Fish Hatchery and were inspected for gravidity on 22-25 April 2003. All 21 were gravid (100%)

and all were used as donors for propagation. Gravidty was determined by gently prying open the valves and visually inspecting the marsupia. If the marsupia were swollen and appeared to contain something other than water, the specimen was considered gravid. Also, marsupial contents were flushed an inspected for contents and glochidial viability immediately prior to use in the hatchery.

Of these 21 propagated females used at the hatchery in 2003, four had also been used for propagation in 2002. These four mussels had tag numbers A49, A67, A123 and A55.

During the 2003 *L. higginsii* collection, we encountered 12 females used in previous years for propagation at the Genoa National Fish Hatchery. We took tissue samples from 7 of these mussels for future genetic analysis.

Attached are photographs of the 21 *L. higginsii* sent to the Genoa National Fish Hatchery in 2003 (Figures 2-22) as well as copies of the field data sheets (Figures 23-24).

TABLE 1. List of mussels with tag numbers (Tagn), length & height (mm), age (years), sex (F=female, M=male) and gravidity status (Y=Yes, N=No) collected in the Mississippi River near Cassville, Wisconsin on 26 March 2003. A total of 21 *L. higginsii* were collected and sent to the Genoa National Fish Hatchery.

TAGN	LENGTH	HEIGHT	AGE	SEX	GRAVID	LIVE	COMENT2
A186	66	57	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A205	67	54	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
Z100	69	52	6	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. NEW, PROPAGATED. PREVIOUSLY UNTAGGED.
A240	72	55	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A204	73	61	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A214	74	67	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A112	76	59	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A123	76	65	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A55	77	58	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A97	79	65	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A65	81	64	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A120	81	67	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A34	81	72	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A52	84	70	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A144	85	70	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A211	86	66	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A67	86	72	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A64	87	66	.	F		N	DIRTY MUDDER. NACRE SHINEY.
A49	87	71	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A236	88	68	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A208	90	66	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A119	101	71	.	F	Y	Y	TO GENOA NATIONAL FISH HATCHERY. DISPLAYING AND ON SUBSTRATE SURFACE. PROPAGATED.
A9	104	74	.	M		N	DIRTY MUDDER. MACRE SHINEY.

Figures 2-22. Photographs of 21 L. higginsii collected near Cassville on the Mississippi R. and sent to the Genoa National Fish Hatchery.


A-U


A119


A120


A123





A24


34


A49


Z100

Figures 23-24. Copies of 26 March 2003 Field Data Sheets for the Collection of L. higginsii from the Mississippi River near Cassville, Wisconsin for Propagation at the Genoa National Fish Hatchery.

Figure 23.

State of Wisconsin
Department of Natural Resources

WISCONSIN MUSSEL SURVEY FORM
Form 1700-29 8-90

WBIC: 0721000 sheet 1 of 1 Source Code: 01 WI
Date (mmddyy): 032603 Waterbody: Mississippi R. Site/Bed Name: - Cassville
7.5' Quad.: ____ Quadcode: ____ Lat: 42 ° 42 ' 37.2 "N Long: 90 ° 59 ' 18.0 "W.
T 3 N, R 5W, S 29, ____ of SE of NE of NW, Co.: Grant (22), Fago R. Mi.: 1502.27
T ____ N, R ____, S ____, ____ of ____ of ____ of ____, Co.: ____; USACOE R. Mi.: 606.47

Area Sa.'ed(m^2) ____.____ Tran./or Stat. # 145 Sta. Dist. from Bank(m): 20 Bank (L or R): L H_2O °C: 8.8
Current 2 Depth(m) 2.9 SUBSTRATE: ____ % bedrock ____ % hardpan ____ % boulder 30 % rubble
40 % gravel 15 % coarse sand 15 % fine sand ____ % muck & silt ____ % clay ____ % detritus
Method (circle one): 1=random pt. 2=transect 3=shore coll. 4=inventory 5=rare & assoc. 6=targeted taxon 7= Harvest Sample 8=cummunity rel. abun. 9=incremental coll. (by ____). other: L. higgins, ad.
Crew (circle collector): Heath, R. Short
Directions: @ 2001, 2002 L. higginsi stock pile, 2½ miles downstr. of telephone pole at tennis court at riverfront park at Cassville.
Comments: Retrieval of 4 ad. of 20 of L. higginsi for propagation at Genoa NAT. Fish. Hatchery. Dove 12:30 - 12:45. Arrived GNFH 15:15, cooler 9.8°C, receiving trough @ clam palace 11.7°C [Roger HAD cooler @ 57°F, trough 54°F], Guttenberg dam : 56,900 cfs, Air ~ 90°F, Tailwater elev. 607.62 ft.

TAXON	total # for taxon living	dead	length	height	age	sex	gravid	tag	L/D pres	length	height	age	sex	gravid	tag	pres
L. higginsi	21	2	66	57			F	[illegible]	L	all displaying for food						
			79	65			F	A97	L							
			86	77			F	A17	L							
			104	74			M	A9	D	dirty, muddy, space shows						
			87	66			F	A64	D	dirty, muddy		"			"	
			85	70			F	A144	L							
			74	67			F	A214	L							
			81	67			F	A126	L							
			87	71			F	A49	L							
			69	57	6		F	[illegible]	L	new, previously untagged						
			73	61			F	A214	L							
			76	65			F	A125	L							
			87	68			F	A236	L							
			81	72			F	A34	L							
			67	54			F	A265	L							
			84	70			F	A52	L							
			72	55			F	A240	L							
			101	71			F	A119	L							
			86	66			F	A211	L							
			90	66			F	A208	L							
			76	57			F	A112	L							
			81	64			F	A65	L							
			77	58			F	A55	L							
D. polymorpha	0	300+														

Figure 24

State of Wisconsin
Department of Natural Resources

Wisconsin Mussel Survey Form
Form 1700-29 8--90

WBIC: ____________ Sheet 1 of 1 Source Code: 01 ____________ WI
Date (mmddyy): 052903 Waterbody: Miss. R. Site/Bed Name: Cannell?
7.5' Quad.: ____________ Quadcode: ____________ Lat: ___° ___' ___"N ______ Long: ___° ___' ___"W
___N, R___,S___, ___of___of___of___. ____________Co.: ______________. Fago R. Mi.: ________.
f___N, R___,S___, ___of___of___of___. ______Co.: ____________. ______USACOE R. Mi: ________. ________
Area Sa.'ed(m²)____. ___Tran or Stat.# 145 Sta. Dist. From Bank(m)____Bank (L or R):______ H2O C: 21.5
Current___Depth(m)___.___**SUBSTRATE:**______%bedrock_______%hardpan_____%boulder_______%rubble
______%gravel ______%coarse sand _____ %fine sand _______%muck & silt _____ %clay _____ %detritus
Method (circle one): 1=random pt. 2=transect 3=shore coll. 4=inventory 5=rare & assoc. (6=targeted taxon)
7=harvest sample 8=cummunity rel. abun. 9=incremental coll. (by ___). Other: ____________
Crew (circle collector): ____________
Directions: ____________

Comments: [illegible handwriting] ... Q. quadrula, E. dilatata, O. olivaria & Q. metanevra

Taxon	Total # for taxon Living	Dead	Length	Height	Age	Sex	Gravid	Tag	Length	Height	Age	Sex	Gravid	Tag
L. higginsi	0	1						A3						
Q. quadrula	0	0	3 gravid, but NOT											
E. dilatata	1	0					N							
D. polymorpha	5	200												